Defense Information Systems Agency

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Web Platform as a Service (PaaS)

17 August 2011

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Platform Service Definition

Cloud Service Models

End-user application is delivered as a service instead of on-site software installations. Platform and infrastructure are abstracted.

Software as a Service (SaaS)

Application platform or middleware as a service on which custom applications and services can be deployed.

Platform as a Service (PaaS)

Physical infrastructure is abstracted to provide computing, storage, and networking as a service, avoiding the expense and need for dedicated systems

Infrastructure as a Service (IaaS)

DISA Cloud Services

E-Mail

Forge.Mil

PaaS (Web)

RACE

From NIST: The capability provided by PaaS to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications

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Platform Benefits

- **Standardized development, test, and production environments with pre-integrated services allowing developer to focus on business logic**
  - **Remove IT infrastructure burden from developers**
    - **Reduce development costs (H/W, S/W, administration)**
    - **No lab infrastructure startup issues**
    - **Allow developers to focus on application development**
    - **No waste of resources due to over provisioning**
- **Fast and inexpensive path to production**
- **Dynamic resource allocation**
  - **Scale applications when necessary**
  - **No waste of resources due to over provisioning**
- **Shared situational awareness for platform services**
- **Utility-based billing**

Air Force Platform Hosting Model

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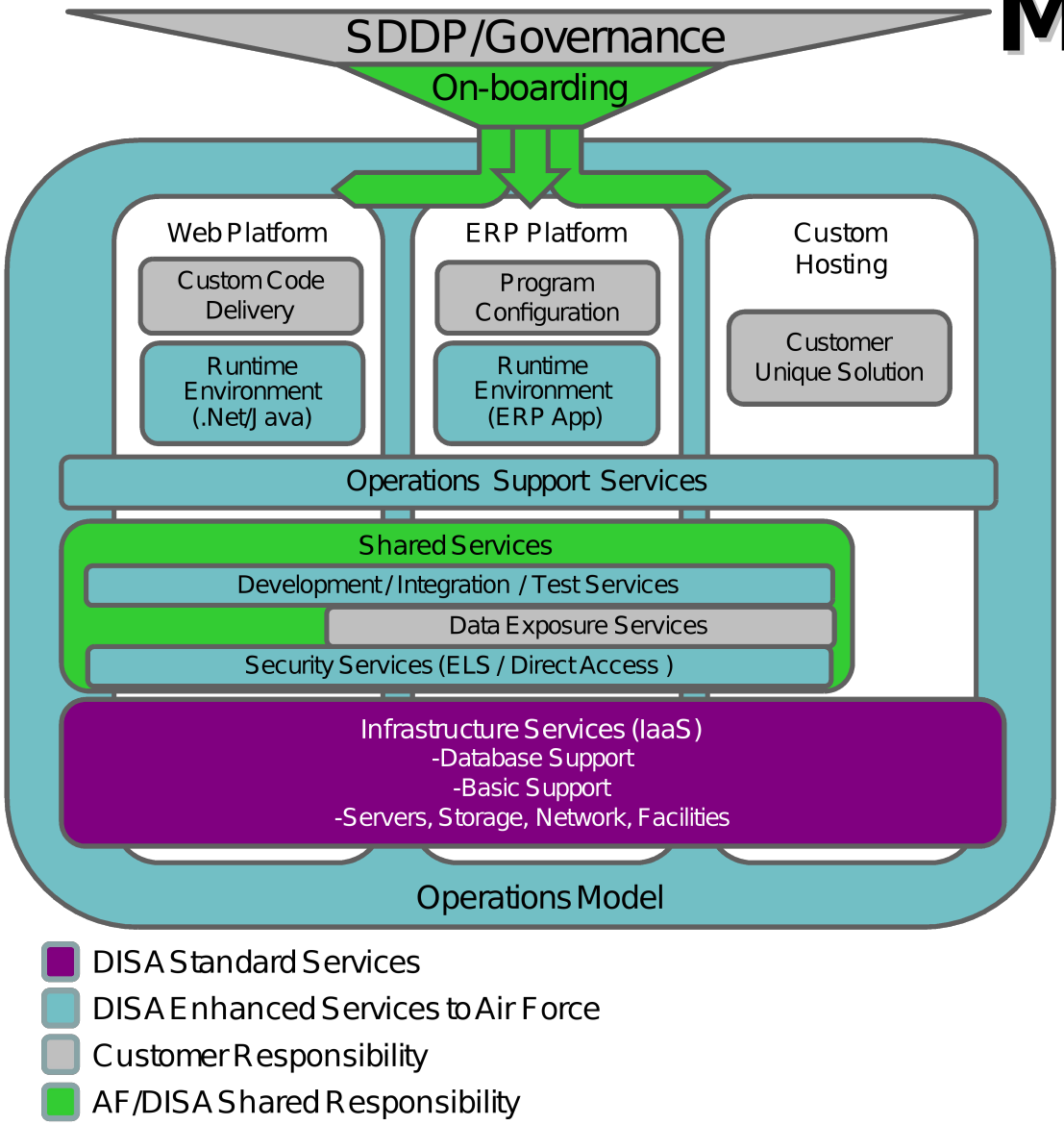

- DISA provides Hardware, Basic and Database infrastructure & support
- ITIL based operations model
- Runtime Environment and Shared Services defined by DISA
  - Initial capability includes DISA infrastructure plus adoption of ELS authentication
  - Follow-on capability adds jointly confirmed shared services
- Custom hosting for unique applications that leverage IaaS and shared services
- Customer builds and delivers Custom Code for DISA to execute in Runtime Environment
- DISA provides path-to-production lifecycle services

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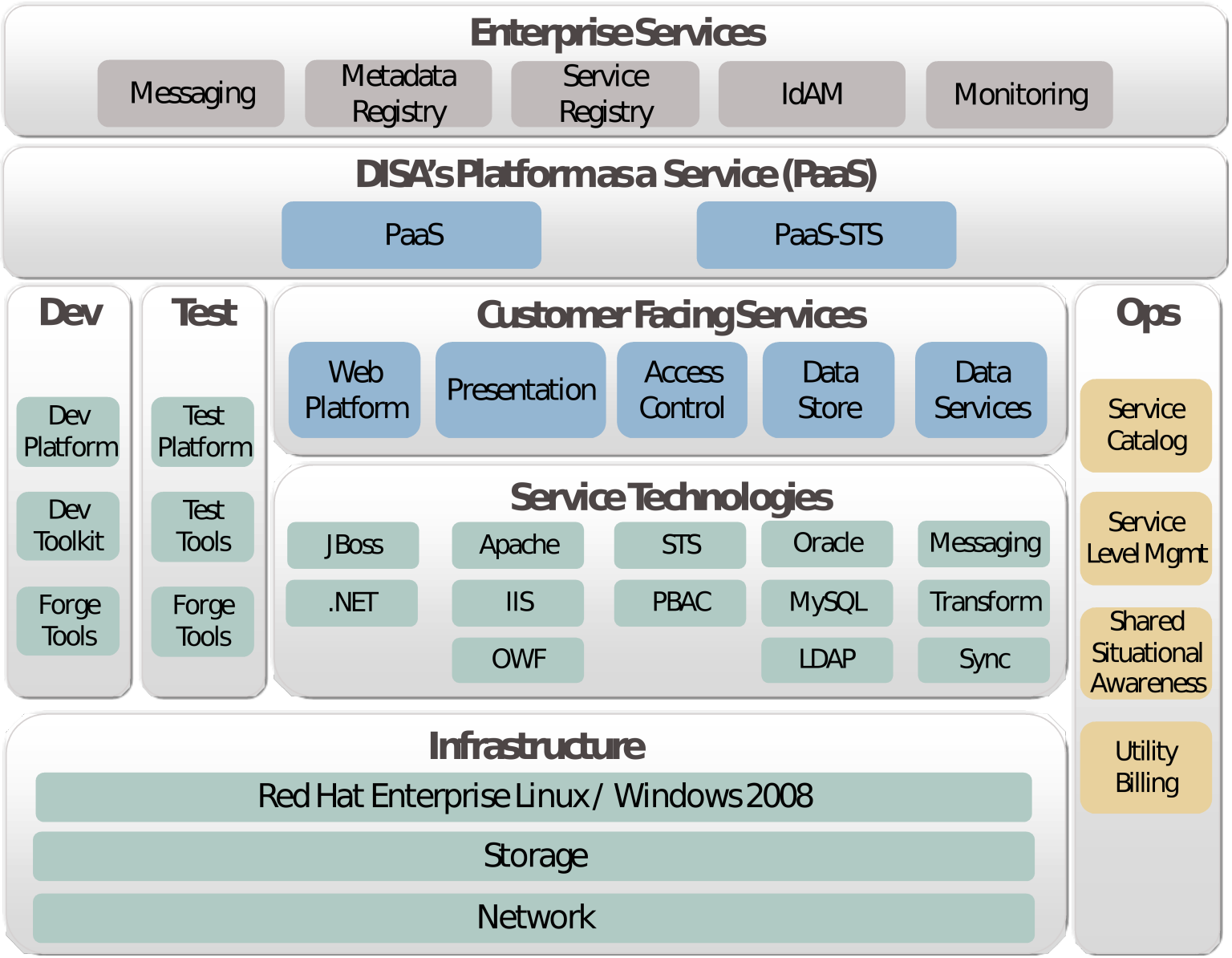
PaaS Decomposition



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PaaS Approach

- **Two Platform as a Service (PaaS) Offerings**
  - **General purpose cloud platform model**
  - **Secure Token Service (STS) to support Air Force Enterprise Level Security (ELS)**
- **Elastic, Self-service, Utility Pricing, Rapid Deployment**
- **JBoss Enterprise Application Platform for Java Web Apps / Services**

PaaS

- DoD adoptable cloud platform
- Standard dev / test / production
  - Java / .NET
- DoD access controls
- Virtual OE
- Leverage Enterprise Services
  - Registries, Security, Messaging…
- Elastic CPU / Memory resources
- Exposure Services

PaaS-STS

- Required for new AF applications
- Standard dev / test / production
  - Java / .NET
- Air Force ELS Access Controls
- Physical OE
- Dedicated Metadata Environment
- Elastic CPU / Memory resources
- Exposure Services

Open Source Software + COTS Infrastructure Technologies

Development / Integration / Test Environments

Self-service Portal

Rapid Path to Production

Operations / Shared Situational Awareness

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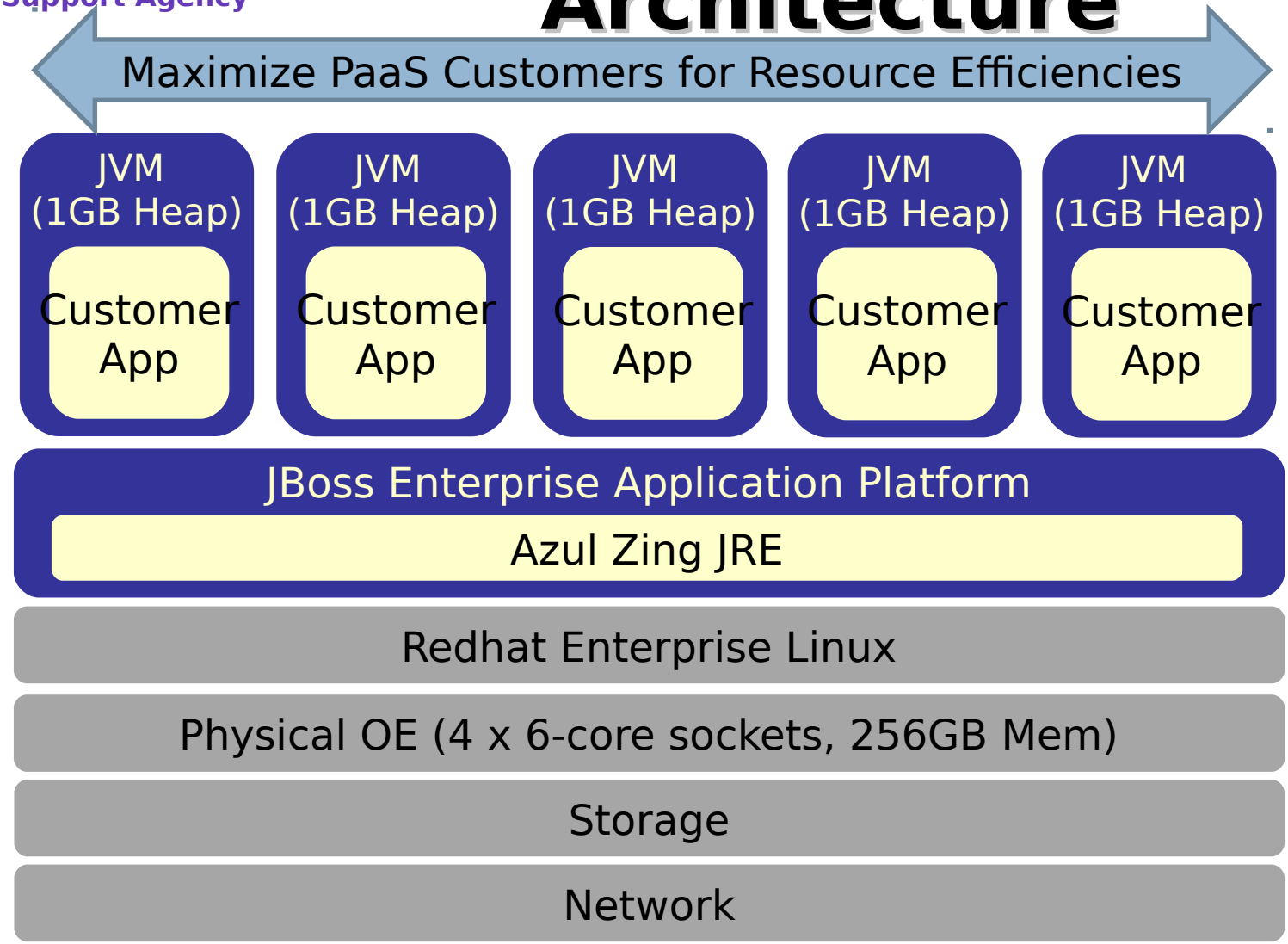
Java Platform Architecture



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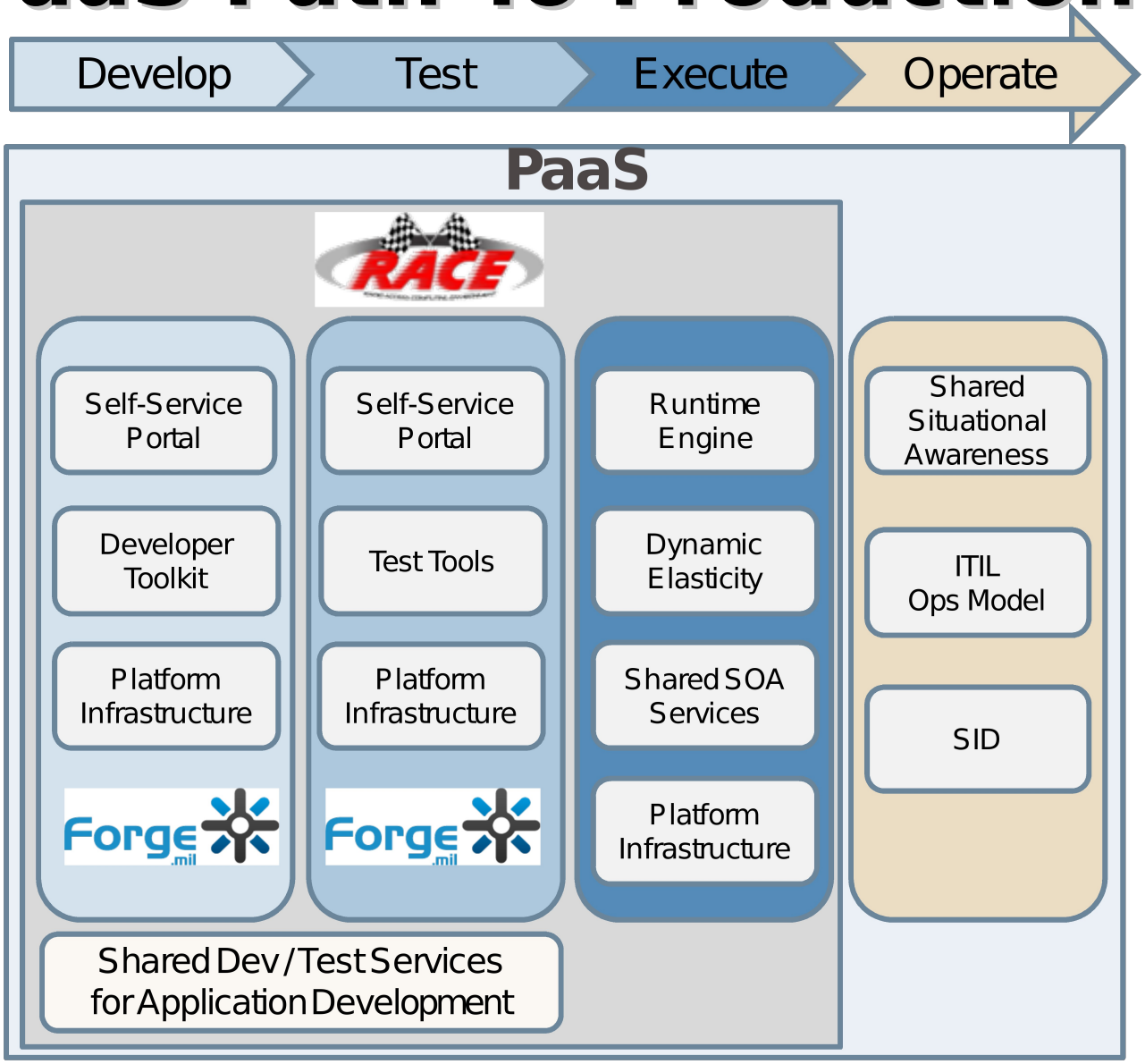
PaaS Path To Production

- Standardized platform from development through production
- More controlled than commercial for safe, secure cloud services
- Meets DoD standards for secure computing
- Smooth path to production with security validation
- Enterprise Portal will provide access to all services
- Orchestration tools will support more mature cloud services
- Location independent capabilities



Rapid, standard, self-service capabilities

PaaS Feature Overview

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PaaS Service Characteristic	DISA PaaS	Commercial
Latest hardware – server/storage	✓	✓
Technology refreshment	✓	✓
Enterprise class facilities	✓	✓
Standard development and production environments	✓	✓
Self-service ordering and rapid provisioning	✓	✓
Unrestricted/Restricted Service Type	✓	✓
Private Services and Data	✓	
Cleared support staff with 100% clearances (IT1/2) – no foreign nationals	✓	
Defense in Depth Security Posture (DoD Information Assurance standards)	✓	
Broadband access	✓	✓
Situational awareness	✓	✓
Program Stability (No need for contract re-compete)	✓	
Service Desk – 24x7	✓	✓
Service Level Management	✓	Few guarantees

Industry competitive capabilities with strong security and faster acquisition

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Type Accreditation for PaaS

Goal: Significantly reduce C&A timeline

- **Concept grounded on principal of reciprocity between developed applications and DISA's platform execution environment**
- **Accreditation authorities for the PaaS platform (DISA) and the developed web services and applications (Customer) will reciprocate on acceptance of each others accreditation work**
- **Approach**
  - **CSD will develop a DIACAP package for type accreditation of the PaaS execution environment**
  - **The customer's development, testing and fielding process will need to ensure rigor for application code (above the line system)**
  - **Acceptance of above the line and below the line IA work will be reciprocal**

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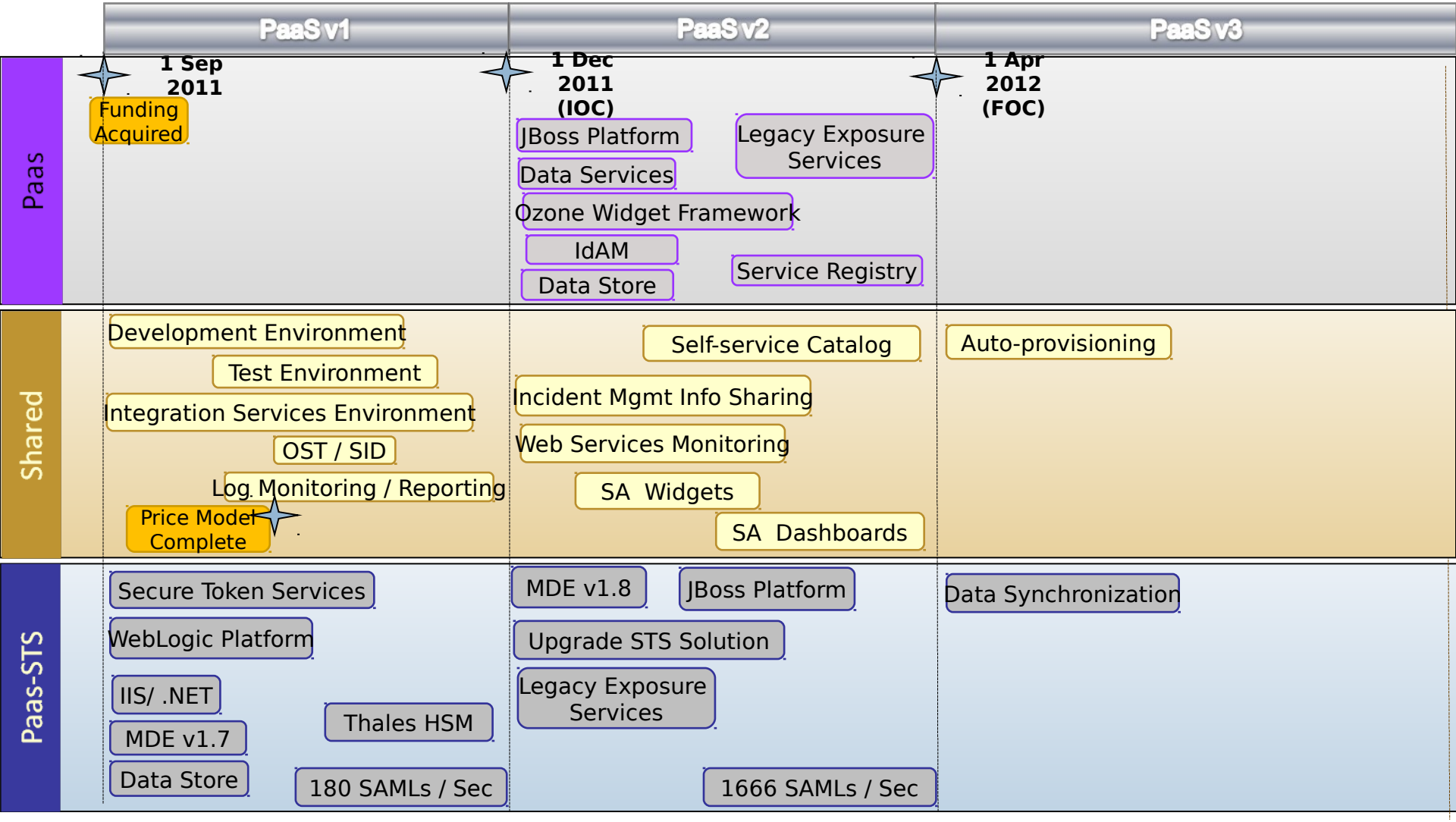
PaaS Roadmap



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How do we get started?

- **Web PaaS will be available 3 Qtr FY12**
- **Contact Air Force CME group to become an early adopter and take advantage of this service**
- **Email AFCME@disa.mil**

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